THE ASTROPHYSICAL JOURNAL

CONTENTS OF VOLUME 390, PART 1

1992 MAY 1, Number 1

	Page	Fiche
THE CONTINUUM MODEL IN ASTROPHYSICS *Richard L. Liboff*	1	74-B1
RELATION OF REDSHIFT SURVEYS TO MATTER DISTRIBUTION IN SPHERICALLY SYMMETRIC DUST UNIVERSES *Hannu Kurki-Suonio & Edison Liang*	5	74-B7
THE LARGE-SCALE GALAXY DISTRIBUTION IN THE SOUTHERN SKY REDSHIFT SURVEY *S. Maurogordato, R. Shaeffer, & L. N. da Costa*	17	74-C7
THE LUMINOSITY OF SUPERNOVAE OF TYPE Ia. I. APPARENT MAGNITUDES AT MAXIMUM LIGHT *Sidney van den Bergh & John Pazder*	34	74-D13
EXTINCTION IN LOW-IONIZATION BROAD ABSORPTION LINE QUASI-STELLAR OBJECTS *David Sprayberry & Craig B. Foltz*	39	74-E6
INTRINSICALLY ASYMMETRIC ASTROPHYSICAL JETS *J. C. L. Wang, M. E. Sulkanen, & R. V. E. Lovelace*	46	74-F1
STAR FORMATION AND THE DISTRIBUTION OF H I AND INFRARED EMISSION IN M51 *Richard J. Rand, Shrinivas R. Kulkarni, & W. Rice*	66	74-G9
DYNAMICAL FRICTION FROM FLUCTUATIONS IN STELLAR DYNAMICAL SYSTEMS *Jacob D. Bekenstein & Eyal Maoz*	79	75-A10
A DESCRIPTION OF SEMIDEGENERATE SELF-GRAVITATING SPHERES OF FERMIONS *M. Membrado, A. F. Pacheco, & J. Sañudo*	88	75-B7
PROPAGATION OF COSMIC-RAY NUCLEI IN A DIFFUSING GALAXY WITH CONVECTIVE HALO AND THIN MATTER DISK *W. R. Webber, M. A. Lee, & M. Gupta*	96	75-C3
COSMIC RAYS FROM THE GALACTIC CENTER: PATH LENGTH DISTRIBUTION AND GALACTIC GRADIENT IN A MODIFIED MODEL *T. Wibig*	105	75-D1
GALACTIC WORMS. I. CATALOG OF WORM CANDIDATES *Bon-Chul Koo, Carl Heiles, & William T. Reach*	108	75-D6
SUPERNOVA RATES AND THE REDDENING OF WOLF-RAYET STARS *Sidney van den Bergh*	133	75-F1
STELLAR EVOLUTION IN BLUE POPULOUS CLUSTERS OF THE SMALL MAGELLANIC CLOUD AND THE PROBLEMS OF ENVELOPE SEMICONVECTION AND CONVECTIVE CORE OVERSHOOTING *Richard B. Stothers & Chao-wen Chin*	136	75-F6
AMBIPOLAR DIFFUSION, CLOUD CORES, AND STAR FORMATION: TWO-DIMENSIONAL, CYLINDRICALLY SYMMETRIC CONTRACTION. II. RESULTS AND A LENGTH SCALE FOR PROTOSTELLAR CORES *Telemachos Ch. Mouschovias & Scott A. Morton*	144	75-G1
AMBIPOLAR DIFFUSION, CLOUD CORES, AND STAR FORMATION: TWO-DIMENSIONAL, CYLINDRICALLY SYMMETRIC CONTRACTION. III. A FURTHER PARAMETER STUDY AND MAGNETICALLY CONTROLLED ACCRETION RATE *Telemachos Ch. Mouschovias & Scott A. Morton*	166	76-A11
PROBING THE CIRCUMSTELLAR ENVIRONMENTS OF VERY YOUNG LOW-MASS STARS USING WATER MASERS *S. Terebey, S. N. Vogel, & P. C. Myers*	181	76-C1

	Page	Fiche
1612 MHz OH MASER EMISSION FROM AXISYMMETRIC CIRCUMSTELLAR ENVELOPES: MIRAS *Alan J. Collison & John D. Fix*	191	76-C13
THE INTERSTELLAR DEUTERIUM-TO-HYDROGEN RATIO: A REEVALUATION OF LYMAN ABSORPTION-LINE MEASUREMENTS *Peter R. McCullough*	213	76-E10
SPECTROPHOTOMETRY OF BOWEN RESONANCE FLUORESCENCE LINES IN THREE PLANETARY NEBULAE *C. R. O'Dell & Christopher O. Miller*	219	76-F4
KINEMATICS AND MORPHOLOGY OF MATERIAL OCCULTING ζ OPHIUCHI *H. S. Liszt*	226	76-G1
MIXING IN EJECTA OF SUPERNOVAE. I. GENERAL PROPERTIES OF TWO-DIMENSIONAL RAYLEIGH-TAYLOR INSTABILITIES AND MIXING WIDTH IN EJECTA OF SUPERNOVAE *Izumi Hachisu, Takuya Matsuda, Ken'ichi Nomoto, & Toshikazu Shigeyama*	230	76-G7
CARBON AND NITROGEN ABUNDANCES DETERMINED FROM TRANSITION LAYER LINES *Erika Böhm-Vitense & José Mena-Werth*	253	77-B4
TIME SERIES OBSERVATIONS OF O STARTS. I. *IUE* OBSERVATIONS OF VARIABILITY IN THE STELLAR WIND OF ζ PUPPIS *R. K. Prinja, L. A. Balona, C. T. Bolton, R. A. Crowe, M. S. Fieldus, A. W. Fullerton, D. R. Gies, I. D. Howarth, D. McDavid, & A. H. N. Reid*	266	77-C6
EVIDENCE FOR TIME VARIABILITY OF PeV ENERGY FLUX FROM CYGNUS X-3: OOTY OBSERVATIONS DURING THE PERIOD 1984–1987 *S. C. Tonwar, S. K. Gupta, M. R. Rajeev, B. V. Sreekantan, & R. Srivatsan*	273	77-D1
SOLAR ACTIVE REGIONS AS A PERCOLATION PHENOMENON *Donat G. Wentzel & Philip E. Seiden*	280	77-D10
VORTEX ATTRACTION AND THE FORMATION OF SUNSPOTS *E. N. Parker*	290	77-E8
A SELF-CONSISTENT TURBULENT MODEL FOR SOLAR CORONAL HEATING *J. Heyvaerts & E. R. Priest*	297	77-F3

1992 MAY 10, Number 2

ON THE ORIGIN OF COSMOLOGICAL MAGNETIC FIELDS *T. Tajima, S. Cable, K. Shibata, & R. M. Kulsrud*	309	79-B1
THE GREAT WALL IN THE CfA SURVEY: ITS ORIGIN AND IMPRINT ON THE MICROWAVE BACKGROUND RADIATION *F. Atrio-Barandela & A. Kashlinsky*	322	79-C1
LINEAR VELOCITY FIELDS IN NON-GAUSSIAN MODELS FOR LARGE-SCALE STRUCTURE *Robert J. Scherrer*	330	79-C10
THE STROMLO-APM REDSHIFT SURVEY. I. THE LUMINOSITY FUNCTION AND SPACE DENSITY OF GALAXIES *J. Loveday, B. A. Peterson, G. Efstathiou, & S. J. Maddox*	338	79-D5
A2163: AN EXCEPTIONALLY HOT CLUSTER OF GALAXIES *M. Arnaud, J. P. Hughes, W. Forman, C. Jones, M. Lachieze-Rey, K. Yamashita, & I. Hatsukade*	345	79-E1
CLUSTER CORRELATIONS FROM *N*-POINT CORRELATION AMPLITUDES *I. Szapudi, A. S. Szalay, & P. Boschán*	350	79-E7
MODELING STRUCTURES OF KNOTS IN JET FLOWS WITH THE BURGERS EQUATION *Lev Kofman & A. C. Raga*	359	79-F5
THE BRAIDED JETS IN THE SPIRAL GALAXY NGC 4258 *Gerald Cecil, Andrew S. Wilson, & R. Brent Tully*	365	79-G1

CONTENTS

	Page	Fiche
SWING AMPLIFICATION OF NONAXISYMMETRIC PERTURBATIONS IN STARS AND GAS IN A SHEARED GALACTIC DISK *Chanda J. Jog*	378	80-B1
THE LYMAN FOREST OF 0014+813 *M. Rauch, R. F. Carswell, F. H. Chaffee, C. B. Foltz, J. K. Webb, R. J. Weymann, J. Bechtold, & R. F. Green*	387	80-B11
FORMATION OF A GIANT GALACTIC GASEOUS HALO: METAL ABSORPTION LINES AND HIGH-VELOCITY CLOUDS *Fan Li & Satoru Ikeuchi*	405	80-D7
DARK MATTER AND BROWN DWARFS: PROSPECTS FOR THE DIRECT DETECTION OF A BROWN DWARF HALO *Ruth A. Daly & Gail C. McLaughlin*	423	80-F1
A NEAR-INFRARED SEARCH FOR BROWN DWARFS IN THE PLEIADES *D. A. Simons & E. E. Becklin*	431	80-F10
POSSIBLE OBSERVATIONAL CONSEQUENCES OF PRIMORDIAL BINARIES IN GLOBULAR CLUSTERS *Ronald E. Taam & D. N. C. Lin*	440	80-G6
SWITCH SHOCKS IN MOLECULAR CLOUDS. I. PLANE-PARALLEL MAGNETOHYDRODYNAMIC ANALYSIS *Michael D. Smith*	447	81-A1
RELATIVISTIC MAGNETOSONIC SHOCK WAVES IN SYNCHROTRON SOURCES: SHOCK STRUCTURE AND NONTHERMAL ACCELERATION OF POSITRONS *Masahiro Hoshino, Jonathan Arons, Yves A. Gallant, & A. Bruce Langdon*	454	81-A9
STEADY, PERIODIC GAMMA-RAY EMISSION FROM ACCRETING X-RAY PULSARS *K. S. Cheng, M. M. Lau, T. Cheung, P. P. Leung, & K. Y. Ding*	480	81-C8
REMARKS ON TRIAXIALITY, SPIN-UP, AND MAGNETIC FIELD OBLIQUITY OF SOME MILLISECOND PULSARS *W. Y. Chau, K. S. Cheng, & J. L. Zhang*	486	81-D1
ON THE 440 keV LINE IN THE CRAB NEBULA PULSAR *W. Bednarek, O. Cremonesi, & A. Treves*	489	81-D5
PSR 0655+64: AN ASTROPHYSICAL LABORATORY FOR TESTING RELATIVISTIC GRAVITY THEORIES *Itzhak Goldman*	494	81-D11
FAR-INFRARED OBSERVATIONS OF M17SW: THE CLUMPY STRUCTURE OF THE PHOTODISSOCIATION REGION *Margaret Meixner, Michael R. Haas, A. G. G. M. Tielens, E. F. Erickson, & M. Werner*	499	81-E3
THE SEPARATION BETWEEN GAS AND DUST FILAMENTS AT THE EDGE OF THE EXPANDING SHELL IN ERIDANUS *G. L. Verschuur, L. J Rickard, F. Verter, M. W. Pound, & D. Leisawitz*	514	81-F7
ON THE CHEMODYNAMICS OF WOLF-RAYET RING NEBULAE: NGC 6888 *César Esteban & José M. Vílchez*	536	82-A7
APPLICATION OF THE IMPROVED HARTLE METHOD FOR THE CONSTRUCTION OF GENERAL RELATIVISTIC ROTATING NEUTRON STAR MODELS *F. Weber & N. K. Glendenning*	541	82-B1
THE ROTATION OF M DWARFS *Geoffrey W. Marcy & Grace H. Chen*	550	82-B11
NONRESONANT RESISTIVE DISSIPATION OF COMPRESSIBLE MAGNETOHYDRODYNAMIC WAVES *Francesco Califano, Claudio Chiuderi, & Giorgio Einaudi*	560	82-C8
SELF-SIMILAR MAGNETOHYDRODYNAMICS. V. GRAVITATING SPHERES AND SPHEROIDS *B. C. Low*	567	82-D1
PARTIALLY COHERENT SCATTERING IN STELLAR CHROMOSPHERES. II. THE FIRST-ORDER ESCAPE PROBABILITY METHOD *K. G. Gayley*	573	82-D8
PARTIALLY COHERENT SCATTERING IN STELLAR CHROMOSPHERES. III. A SECOND-ORDER ESCAPE PROBABILITY METHOD *K. G. Gayley*	583	82-E5
THE CONSTITUTION OF THE ATMOSPHERIC LAYERS AND THE EXTREME ULTRAVIOLET SPECTRUM OF HOT HYDROGEN-RICH WHITE DWARFS *Stéphane Vennes*	590	82-F1
GAMMA-RAY DEPOSITION AND NONTHERMAL EXCITATION IN SUPERNOVAE *Cecilia Kozma & Claes Fransson*	602	82-G1

	Page	Fiche
LIMITS ON THE MAGNETIC FLUX OF PRE-MAIN-SEQUENCE STARS *Gibor Basri, Geoffrey W. Marcy, & Jeff A. Valenti*	622	83-A9
THERMONUCLEAR FLASH MODEL FOR LONG X-RAY TAILS FROM AQUILA X-1 *Ikko Fushiki, Ronald E. Taam, S. E. Woosley, & D. Q. Lamb*	634	83-B9
SPIRAL SHOCKS AND SUBDAY VARIABILITY IN SS 433 *Sandip K. Chakrabarti & T. Matsuda*	639	83-C1
WHAT DRIVES THE MASS TRANSFER IN CYGNUS X-3? *Abhas Mitra*	645	83-C8
PROPAGATING ABSORPTION ENHANCEMENTS IN THE WIND OF THE EXTREME Of SUPERGIANT HD 151804 *A. W. Fullerton, D. R. Gies, & C. T. Bolton*	650	83-D1
THE SIMULATED FEATURES OF HELIOSPHERIC COSMIC-RAY MODULATION WITH A TIME-DEPENDENT DRIFT MODEL. II. ON THE ENERGY DEPENDENCE OF THE ONSET OF NEW MODULATION IN 1987 *J. A. Le Roux & M. S. Potgieter*	661	83-E1
A NEW SOLAR IRRADIANCE CALIBRATION FROM 3295 Å TO 8500 Å DERIVED FROM ABSOLUTE SPECTROPHOTOMETRY OF VEGA *G. W. Lockwood, H. Tüg, & N. M. White*	668	83-E9
MAGNETIC RECONNECTION IN INCOMPRESSIBLE FLUIDS *Edward E. DeLuca & Ian J. D. Craig*	679	83-F7
STEREOSCOPIC OBSERVATIONS OF A SOLAR FLARE HARD X-RAY SOURCE IN THE HIGH CORONA *S. R. Kane, J. McTiernan, J. Loran, E. E. Fenimore, R. W. Klebesadel, & J. G. Laros*	687	83-G7